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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/136,483
Filing Date: August 19, 1998
Appellant(s): KUMAR ET AL.

Peter S. Dardi, Ph.D.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 3/20/08 appealing from the Office action mailed 10/17/07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

Appeal 2001-1031 (BPAI) and Appeal 04-1074 (CAFC), as outlined by appellants.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

Claims 17 and 18 are allowed.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,389,194	ROSTOKER et al.	2-1995
6,001,730	FARKAS et al.	12-1999
4,842,837	SHIMIZU et al.	6-1989

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-3, 5-8 and 19-22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rostoker et al (U.S. Patent 5,389,194).

The Rostoker et al. reference teaches a method of polishing a surface using a polishing composition composed of particles dispersed in an aqueous solution. The taught particles are composed of alumina (alpha or gamma alumina-see column 4, lines 16-19) or silica particles. The particles have a size (X value of 10-100) and a distribution that is controlled to within a certain selected size (Y value which is "P" (10-50%) of "X"). See the claims Example 3 teach that the particles have an average particle size of 10 nm (the X value) and a distribution where

all the particles have a size within 10% of the average particles size (the X value). This means that all the particles are within the range of 10% of the average particle size and 110% of the average particles size. Accordingly, there are no particles have a size greater than 3 times the average particle size. This is because 10% (P value) of 10 nm is 1 nm and 110% of 10 nm is 11 nm, thus the size distribution can be 10 nm $\pm$1 nm or a distribution of between 9-11 nm (reads on the distribution of instant claims 1, 23, 24 and 28). Similarly, assuming X to be 10 nm and P to be 50% (values clearly disclosed by reference), then Y would be 50% of 10 nm or 5 nm, thus the distribution can be 10 nm $\pm$5 nm, thus there are no particles have a size greater than 3 times the average particle size. With respect to the primary particle limitation, it is the examiners position that absent evidence to the contrary, the particle defined in the reference reads on a primary particle.

The reference teaches a polishing composition which comprises the claimed collection of particles (see specific reasoning above), thus since the claimed invention suggests the claimed distribution for the reasons defined above, the instant claims are anticipated by the reference. Assuming arguendo, in the alternative, the reference clearly teaches a distribution which encompasses the claimed distribution because the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see ***In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976).**

Claims 11-16 are rejected under 35 U.S.C. 103(a) as being obvious over Rostoker et al (U.S. Patent 5,389,194) in view of Farkas et al. (730).

Farkas et al. teaches in abstract and column 6, lines 14-20 that in polishing compositions the solvent can be water, an alcohol or a mixture thereof and that the abrasive is generally 1-12 percent of the slurry.

The primary reference is silent with respect to the amount of particles (claims 11-12) in the dispersion, however, it is the examiners position that that one skilled in the art would have routinely known the amount of abrasive to be included in the polishing slurry to produce the most optimum slurry, said amount being a conventional amount, as clearly shown by Farkas et al.

With respect to claims 13-14, Farkas et al. teaches that the use of an alcohol or alcohol/water medium is conventional in polishing compositions and is the examiners position that one skilled in the art would have routinely known that either water, alcohol or an alcohol/water carrier can be used as the dispersing medium to form polishing compositions.

With respect to claims 15-16, it is prima facie obvious to combine two or more materials disclosed by the prior art to form a third material (combination of abrasives) that is to be used for the same purpose. In re Kerkhoven 205 USPQ 1069.

Claims 1-3, 5-8 and 19-22 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over all the claims of copending Application No. 09/969,025. Although the conflicting claims are not identical, they are not

patentably distinct from each other because the reduction to practice of the copending claims would render obvious the instant claims.

The copending claims suggest a collection of particles, wherein said particles can have a size distribution within the claimed range, thus meeting the instant claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

(10) Response to Argument

At most, appellants argue that they have shown un-refuted evidence that the Rostoker patent does not teach a process suitable for producing the claimed particle collections. This is not persuasive because appellants arguments are merely directed to process limitations, however the claims are directed to a composition. This line of argument would appear to be arguing that the particles taught in the Rostoker et al. patent are those of the Siegel et al. patent. The examiner disagrees because Rostoker et al. does not state that this is the only method of making the particles, but rather uses the Siegel et al. reference as showing a known **possible** method. Rostoker et al. does limit the method to the Siegel et al. method, as apparently argued by the appellants. Appellants are apparently ignoring the teachings in Rostoker that define that the particles have the claimed distribution. With all due respect, where in the Rostoker patent is it stated that the particles therein are only produced using the method of Siegel? The examiner is unable to find any passage relating to this. As for the declarations of Dr Singh, Dr. Li and Dr. Kambe that indicate that other approaches to produce the claimed particle distributions are available and that the Rostoker patent does not teach any other approach, this is not convincing

because (1) all patents are presumed valid and (2) although Rostoker teaches the claimed particles size and distribution, the particles must have been made by a method consistent with producing said size and no clear proof otherwise has been established. Appellants alleged proof amounts to no more than mere allegations and do not show any convincing evidence (testing) that the size and distribution disclosed by the reference are not the same as that claimed.

Appellants state that the examiner has not abided by the CAFC's remand. The examiner disagrees because comments of both the Singh and Kambe declarations have been defined, as is clear from (1) the original examiners answer dated 11/16/00 which commented on the Kambe declaration and (2) the final office action dated 3/7/06 which commented on the Singh declaration, thus contrary to appellants position, the examiner clearly abided by the CAFC's decision. Although a discussion of these declarations has already been provided, to make this examiners answer complete, said discussions will be redefined.

The declaration under 37 CFR 1.132 by Dr. Singh is insufficient to overcome the rejection of the claims based upon the Rostoker patent. The declaration criticizes one possible method of determining Q, as defined in the reference and there has been no showing of a preponderance of evidence that the Q value cannot be determined by the disclosed method. Since every patent is presumed valid (35 U.S.C. 282), and since that presumption includes the presumption of operability Metropolitan Eng. Co. v. Coe, 78 F.2d 199, 25 USPQ 216 (D.C. Cir. 1935), affidavits or declarations attacking the operability of a patent cited as a reference must rebut the presumption of operability by a preponderance of the evidence. In re Sasse, 629 F.2d 675, 207 USPQ 107 (CCPA 1980). Given the other teachings in the patent that Q is inversely proportional to Y, the fact the patent gives actual numerical values for Q and the

teachings of the examples where the size distribution of the particles are clearly stated, the fact that the method for determining Q might be unclear to Dr. Singh and not found in the books cited by Dr. Singh does not detract from rest of the teachings of this patent nor does it show the Q value cannot be determined by one of ordinary skill in the art. The declaration does not show that the claimed particles are different and unobvious over those of the reference and Dr. Singh's comments with respect to the Siegel patent are given no weight since he has not provided any evidence to support his conclusion and the fact the Siegel patent is not part of the rejection. Furthermore, the argument in lines 2-4 on page 5 of the declaration that he is unaware of any other methods of making the claimed particles is not supported by facts. As defined in the Rostoker patent, the Q value is inversely related to the Y and that patent clearly defines the Q values. The declaration defines that the units for the Q value is not dimensionless but rather 1/cm or 1 length. The examiner is unclear as to how Dr. Singh obtained these units and the declaration does not clearly show that the Q value is not dimensionless. The number or amount of particles having a certain size would be nm or a percentage of nm and not $1/cm^3$ (number of particles/volume of particles). The declaration continues to argue that the description (of the reference Q value) is inconsistent. Contrary to this statement, the description is clear as to how to obtain the Q values. The declaration also states that the Q value does not correspond to a Gaussian distribution. Although this may be the case, this value is the ratio of a number of particles having an average size divided by the number of particles having a size less than 50% of the average size (the value of Q is understood by the examiner and the Board or Patent Appeals and Interferences). The Q value is merely a quality factor and the fact that this value in not discloses in any books and is not a common method does not mean that it cannot be

determined by one of ordinary skill in the art in reviewing the Rostoker patent. The declaration provides no sufficient evidence to support the statements made therein. The balance of the declaration refers to references and rejections not made in this application. Finally, Dr. Singh is reminded that the patent number for Rostoker, as defined in the declaration is incorrect. It is to be noted that the standard for evaluating the teachings of Rostoker is not what is possible but what a person of ordinary skill in the art would interpret the subject matter to mean.

With respect to the Kambe declaration, this declaration does not show any evidence rebutting the obviousness rejections. The declaration appears to state that the synthesis of the reference is not capable of producing nanoparticles as defined by the claimed invention. <u>This is not convincing because Rostoker et al. teach alumina particles having sizes within the claimed range and therefore a prima facie case of obviousness is established.</u> Since the particles have the same size and distribution, they must have been produced by some method. In addition, the declaration is based on opinions which are not substantiated by clear and convincing evidence. In other words, the declaration is insufficient to overcome the rejection because it amounts to an affirmation that the affiant has never seen the claimed subject matter before. This is not relevant to the issue of anticipation or nonobviousness of the claimed subject matter and provides no objective evidence thereof. See MPEP 716. Accordingly, it does not overcome the rejection.

With respect to the declaration of Dr. Li, the crux of this declaration is that Dr. Li concluded that from all the research that the materials claimed in the instant application were not publicly known at the time of filing the instant application. The examiner asks what is meant by publicly known. Does this mean in commercial use? The declaration includes a statement which amounts to an affirmation that the affiant has never seen the claimed subject matter before. This

is not relevant to the issue of nonobviousness of the claimed subject matter and provides no objective evidence thereof. See MPEP § 716. The overwhelming evidence is the Rostoker patent which clearly teaches the claimed particles (size and distribution). Since the Rostoker patent was published prior to the filing date of the instant invention, it was publicly known, thus the particles themselves were known prior to the invention. The declaration, at most, establishes that the articles disclosed therein did not disclose the claimed invention. The examiner does not rebut this, but these articles were not part of the rejection and the reference applied (Rostoker) clearly teaches the claimed particles and this declaration is ineffective to overcome the teachings of the reference relied upon. In as much as the Dr. Li declaration contains a copy of a micrograph for delta alumina, the examiner is unclear as to this because (1) the claims are not directed to delta alumina, thus how is this micrograph relevant and (2) any disclosure of the micrograph is muddled, at best (micrograph is unclear).

The examiner is not denying that Dr. Singh, Dr Kambe and Dr. Li are experts in the field, the examiner has simply rebutted the declarations and appellants have not presented any clear and convincing evidence showing the Examiner is incorrect in his rebuttal.

Appellants argue that the examiner has not reviewed Dr Kambe's declaration in view of professor Singh's declaration. The examiner has done this, however, the reevaluation does not clearly rebut the examiners position above. These declarations do not establish clear evidence of unobviousness over the reference applied. Appellants make a bold statement in that the examiner has not considered the declarations consistent with the courts ruling. Contrary to appellants position, the declarations have be evaluated consistent with the above ruling, however, as clearly defined above, the declarations are not convincing.

Pertaining to the Rostoker patent, appellants appear to argue that the Rostoker patent contains phophetic examples that add nothing to the disclosure of the reference. The examiner acknowledges the examples of this reference, however, it is clear from the examples that the claimed distribution is meet thus the examiner is unclear as how the examples do not teach the invention defined in the disclosure of the reference because these examples clearly are predictive of what is disclosed in the reference disclosure (i.e. the examples specifically teach an average particles size and a distribution which is the "P" value). Appellants also state that Rostoker has a muddled description relating to the particle uniformity. The examiner is unclear as to this argument because, looking at the examples and claim 1 of the reference, the reference clearly teaches an average particle size (X) and a distribution (P% of X), thus the description is clear.

Appellants also argue that Rostoker et al. produces the particles by the Siegel et al. patent (5,128,081) method and this method is not capable of producing the claimed particle collection (i.e. size). The examiner disagrees because Rostoker et al. does not state that this is the only method of making the particles, but rather uses the Siegel et al. reference as showing a known **possible** method. Rostoker et al. does limit the method to the Siegel et al. method, as argued by the appellants. Appellants also appear to argue that the particles taught in the Rostoker et al. patent are those of the Siegel et al. patent. Appellants are apparently ignoring the teachings in Rostoker that define that the particles have the claimed distribution. With all due respect, where in the Rostoker patent is it stated that the particles therein are only produced using the method of Siegel? The examiner is unable to find any passage relating to this. Appellants state that the declaration of Dr Kambe establishes that no method was available for making the claimed particle collection (size). , As defined above, the declaration is insufficient to overcome the

rejection because it amounts to an affirmation that the affiant has never seen the claimed subject matter before. This is not relevant to the issue of anticipation or nonobviousness of the claimed subject matter and provides no objective evidence thereof. See MPEP 716. Accordingly, it does not overcome the rejection. The fact that the examples (of Rostoker) do not say how to obtain the particles within the taught ranges does not establish that methods for making the particles are unknown because they must have been made, thus does not overcome the rejection. A reference does not require specific disclosure of what is already known to one of ordinary skill in the art. *Case v. CPC International Inc.* 221 USPQ 196, 201 (Fed. Cir. 1984). In view of this, the reference clearly enables the invention disclosed therein. Applicants also state that the process of Siegel simply does not make the claimed particles. This argument is irrelevent because the rejection is not based on the teaching of Siegel, as defined above. There has been no showing that method of producing or forming the disclosed particle size distribution were not already known to one of ordinary skill in the art. Appellants have not presented any evidence that would clearly show that no other methods were known to produce the taught particles. To rebut this argument, reference is made to U.S. patent 4,842,837 which teaches a method for forming silica articles of 100 nm or less. Although this patent is directed to the manufacture of silica particles, it is the examiners position that the skilled artisan would have appreciated that it is applicable to alumina particles, as well, especially since Rostoker teaches that the particles can be silica or alumina. Not withstanding the above patent, Rostoker teaches the claimed particles size and since the claimed particle size is clearly taught, it must have been made by a method consistent with producing said size.

Appellants also argue that they have presented unrefuted evidence that the process of Siegel cannot make the claimed particles. This argument is based on the Siegel patent teachings, and in the above rejections, the examiner is not relying on the teachings of Siegel to reject the claims. It would appear that appellants are arguing the process, however, the claimed invention is directed to a collection of particles and not a process. In view of this, the examiner is unclear as to how arguments directed to a process would provide evidence of patentability to a collection of particles especially since (1) appellants are not claiming a process, (2) the particles of Rostoker are not necessarily produced by the method of Siegel and (3) the particles of Rostoker ore of the same size and distribution, as those claimed. It would appear that appellants are primarily focusing on the production method, however, the claims are not defined in terms of a method. In view of this, any arguments pertaining to the method are irrelevent and the claims are interpreted in view of the size requirements only.

Appellants also argue that the prior art does not enable a person skilled in the art to make or use the invention. This is not persuasive because the art clearly shows that the claimed particles are known and since the claimed particle size is clearly taught, it must have been made by a method consistent with producing said size. The inventors of the Rostoker patent are also clearly skilled artisan and thus since the claimed particle size is known, the inventors of said patent must have known how to produce the size disclosed therein.

Appellants also state that they have presented an enormous amount of evidence to support patentability. The examiner is well aware of appellants evidence provided, however, the office also has presented clear evidence that the claimed particles are known, thus rebutting appellants evidence. This evidence being the Rostoker patent teachings and all of appellants arguments or

evidence do not clearly establish why the claimed particles are patentably distinct from the Rostoker particles. Appellants appear to state that the office has not offered anything in reply to appellants unrefuted evidence. To the contrary, the evidence offered by the office is the teachings of Rostoker which clearly teaches the claimed particles and distribution. Appellants are referred to all of the previous office actions which fully address all of appellants arguments and declarations submitted. As defined above, Rostoker clearly teaches the claimed limitations, as is evident from all the previous office action and the board decision dated 2/27/03.

For clarification, the examiner defines the calculations of the Rostoker distribution below and these clearly establish that the reference teaches the claimed invention.

The taught alumina particles have a preferred average particle size in the range of 10-100 nm, which falls within the claimed range, and a size distribution about the average particle size in the range of 10%, 20%, or 30%. Thus the references teach all the particles fall within 10% of the average particle size and 110% of the average particle size; within 20% of the average particle size and 120% of the average particle size and within 30% of the average particle size and 130% of the average particle size. These ranges fall within the distribution defined by claims 1, 5, 6-8 and 19-22. It is clear that none of the particles in these ranges will be 3 or even 2 times of average particle size and will have a distribution that falls within the scope of that set forth in instant claims 6-8 and 19-22, as show by the following calculation. Choosing an average particle size of 40, the size distributions which are 10%, 20% and 30% about the average particle size are respectively, 36-44 nm, 32-48 nm and 28-52 nm. Choosing an average particle size of 30, the size distributions which are 10%, 20% and 30% about the average particle size are respectively, 27-33 nm, 24-36 nm and 21-39 nm. Choosing an average particle size of 20, the size

distributions which are 10%, 20% and 30% about the average particle size are respectively, 18-22 nm, 16-24 nm and 14-26 nm. Choosing an average particle size of 10, the size distributions which are 10%, 20% and 30% about the average particle size are respectively, 9-11 nm, 8-12 nm and 7-13 nm. Example 3 in reference teaches a polishing slurry comprising alumina particles. The taught alumina particles have an average particle size of 10 nm (X of the example) and a distribution about the average particle size of 10% (P in the example) which means that all the particles in the slurry are within the range of 10% of the average particle size and 110% of the average particle size (within the range of 9-11 nm). This range falls within size range of the instant claims and shows no particles have a size 3 or even 2 times the average particle size, which would be 30 nm or 20 nm respectively. Similar results are apparent for the distribution set forth in claims 6-8 and 19-22 and said results show that the claimed distribution is clearly defined by Rostoker.

It would appear that appellants are primarily focusing on the production method, however, the claims are not defined in terms of a method. In view of this, any arguments pertaining to the method are irrelevent and the claims are interpreted in view of the size requirements. The Rostoker et al. clearly teaches particles composed of alumina (alpha or gamma alumina-see column 4, lines 16-19) having a size (X value of 10-100) and a distribution that is controlled to within a certain selected size (Y value which is "P" (10-50%) of "X"). See the claims. Example 3 teach that the particles have an average particle size of 10 nm (the X value) and a distribution where all the particles have a size within 10% of the average particles size (the X value). This means that all the particles are within the range of 10% of the average particle size and 110% of the average particles size. Accordingly, there are **no** particles have a size greater than 3 times the

average particle size. This teaching clearly reads on the claimed size because all of the size requirements are clearly disclosed by this reference. The examiner has repeatedly stated that if appellants contest this, they must show clear reasons as to why the size disclosed by the reference is not the claimed size. To date, appellants have not clearly established any differences (i.e. compare the particles of the reference with the particles of the claimed invention to show a difference).

To further comment on appellants criticism of the Q value defined in Rostoker, it is well established that a reference can be used for all it realistically teaches and since examples 1 and 3 and the claims of the reference do not refer to any Q value, no Q value is needed to understand the claims and the examples and it is these that teach a distribution that clearly reads on the instant claims.

In as much as appellants are arguing inoperability, these arguments are not based on facts. A reference is presumed to be operable and the burden is upon appellants to show clear evidence otherwise. Appellants have not defined any clear evidence of inoperability. Rostoker et al. clearly teaches (as outlined above) a collection of particles having a nm size, wherein **no** particles have a size greater than 3 times the average particle size. Appellants also state that the Examiner, the Board and the Solicitor all had separate interpretations of the reference. This is not true because the interpretations are consistent with calculations made by the board where not made by the examiner in the initial office actions (prior to first examiners answer). However, said calculation was made by the examiner in response to the remand from the board, thus the interpretations are consistent with one another.

Finally and in summary of the above, (1) the examiner has clearly rebutted all of appellants positions taken and thus the evidence relied upon by appellants is not un-refuted and (2) the examiner is unclear as to how arguments directed to a process would provide evidence of patentability to a collection of particles especially since (a) appellants are not claiming a process and (b) the particles of Rostoker are not necessarily produced by the method of Siegel. It would appear that appellants are primarily focusing on the production method, however, the claims are not defined in terms of a method. In view of this, any arguments pertaining to the method are irrelevent and the claims are interpreted in view of the size requirements only. The fact that the examples (of Rostoker) do not say how to obtain the particles within the taught ranges does not establish that methods for making the particles are unknown because they must have been made. A reference does not require specific disclosure of what is already known to one of ordinary skill in the art. *Case v. CPC International Inc*. 221 USPQ 196, 201 (Fed. Cir. 1984). In view of this, the reference clearly enables the invention disclosed therein.

With respect to the 103 rejection of Rostoker et al. in view of Farkas et al., appellants are arguing Farkas alone, and not in combination, as applied, and one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

With respect to the ODP (obvious double patenting) rejection based on 09/969,025, appellants argue that an ODP rejection is not proper for applications filed after June 8, 1995. This is not persuasive because the MPEP clearly states that an ODP can be made in application filed after June 8, 1995. Any arguments presented against this rejection are not persuasive

because the purpose of an ODP rejection and a subsequent terminal disclaimer is also to establish common ownership though out the life of any patented granted from the applications defined in the rejection.

(11) Related Proceeding(s) Appendix

Copies of the court or Board decision(s) identified in the Related Appeals and Interferences section of this examiner's answer are provided herein.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Michael Marcheschi

/Michael A Marcheschi/

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